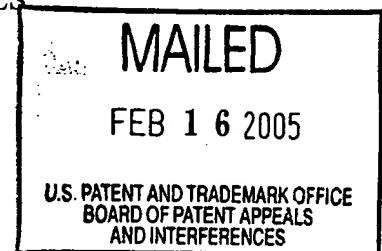


The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* MICHAEL S. DOBBINS  
and ROBERT E. MCLAY



Appeal No. 2004-2263  
Application 08/833,620

HEARD: January 26, 2005

Before GARRIS, WARREN and PAWLICKOWSKI, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal and Opinion*

We have carefully considered the record in this appeal under 35 U.S.C. § 134, including the opposing views of the examiner, in the answer, and appellants, in the brief and reply brief,<sup>1</sup> and based on our review, find that we cannot sustain the ground of rejection of appealed claims 12, 13, 22, 33 through 39, 41 through 44, 46, 47, 49 and 51 through 53<sup>2,3</sup> under 35 U.S.C.

<sup>1</sup> We consider the brief filed December 30, 2002.

<sup>2</sup> See brief, page 2, and the appendix to the brief. We note here that while the examiner states the rejection as involving claims 12, 13, 22, 33 through 38, 41 through 44, 46, 47 and 53 as well as claims 39 through 42 and 50 through 52 in the answer (page 3) and in the final rejection mailed June 20, 2002 (page 2), the claims under rejection are as we have listed them above, which listing also appears at paragraph 5 of the summary of said final rejection and agrees with page 2 of the brief. See the amendment filed May 17, 2002 with respect to an amendment to

§ 103(a) as being unpatentable over Miller et al. (Miller) in view of Schwarz et al. (Schwarz)<sup>4</sup> and optionally in view of Hyde and/or Kawaguchi et al. (Kawaguchi)<sup>5</sup> (answer, pages 3-9).

Appellants have relied on the following references in the brief (pages 11-14) and reply brief, which references are of record and discussed in the Declaration of appellant Dobbins under 37 CFR § 1.132 (Dobbins declaration) (¶ 5):<sup>6</sup>

Kratel et al. (Kratel) 2 049 641 Dec. 31, 1980  
(published UK Patent Application, United Kingdom)

Jonathan Lipowitz (Lipowitz), “Flammability of Poly(Dimethylsiloxanes). I. A Model for Combustion,” 7 J. Fire & Flammability 482-503 (October 1976).

Appealed independent claims 12, 13, 22, 38, 43, 46 and 49 are drawn in “Jepson” format which includes an implied admission by appellants that processes of making non-porous bodies of high purity fused silica glass from a gas stream containing a silicon-containing compound in vapor form capable of being converted through thermal decomposition with oxidation or flame hydrolysis to SiO<sub>2</sub> were known, and their contribution is the improvement comprising utilizing a halide-free polymethylcyclosiloxane as the vaporized silicon-containing compound. *See generally, In re Ehrreich*, 590 F.2d 902, 909-10, 200 USPQ 504, 510 (CCPA 1979); 37 CFR § 1.75(e) (1996); Manual of Patent Examining Procedure § 608.01(m).

The examiner cites the prior art processes of preparing silica glass using vaporized silicon tetrachloride disclosed in Miller as representing the known prior art processes admitted in the claims by appellants, and submits that the claimed processes are *prima facie* obvious because one of ordinary skill in the art would have modified the processes disclosed in Miller by replacing the vaporized silicon tetrachloride with vaporized polymethylcyclosiloxanes in view of the teachings of Schwarz, Hyde and Kawaguchi (answer, pages 3-6). The examiner finds that Schwarz would have

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claim 49 and the cancellation of claims 40 and 50. Thus, the examiner’s statement of the ground of rejection is harmless error.

<sup>3</sup> Also of record are claims 45 and 48 which have been allowed by the examiner.

<sup>4</sup> We consider and refer to the translation of Schwarz prepared by Technical & Patent Translations, Rochester, New York (1996), and submitted by appellants.

<sup>5</sup> We consider and refer to the translation of Kawaguchi prepared by the Ralph McElroy Company, Custom Division, Austin, Texas (1995), and submitted by appellants.

<sup>6</sup> The Dobbins declaration was filed November 29, 1999.

taught the substitution of polymethylcyclosiloxanes disclosed therein for silicon tetrachloride in the preparation of silica soot, and would have suggested the use of such polymethylcyclosiloxanes in place of carbon tetrachloride in Miller because the product of Schwarz is free of chlorine and there is no need to remove acid which would be advantageous in Miller's processes. The examiner finds that Hyde is evidence that it had long been known to use hydrolysable compounds in making silica soot, citing page 2, lines 34-37, and that no any polymethylcyclosiloxanes are disclosed therein. The examiner finds that Kawaguchi discloses a generic formula which can be interpreted to encompass polymethylcyclosiloxanes, relying on an "at once envisaged" by one of ordinary skill" theory attributed to *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962), even though "no cyclosiloxane is explicitly mentioned."

Appellants present arguments and testimonial and literature evidence in support of their contention that the examiner has failed to establish a *prima facie* case of obviousness (brief, pages 9 through 14). Appellants submit that "only Schwarz utilizes polymethylcyclosiloxane" and then to prepare a silicic acid dispersion product, without suggestion that this product would build up as a deposit on a support, and that "such a deposit can be consolidated to form a consolidated glass body." Thus, appellants argue there is no expectation that polymethylcyclosiloxanes as processed by Schwarz would be useful in making a consolidated glass monolith, and therefore combinable with the processes of Miller, Hyde and Kawaguchi which produce high purity fused silica glass, pointing out that Miller and Hyde do not teach polymethylcyclosiloxanes and "Kawaguchi also makes no explicit mention of using this material."

Appellants submit that polymethylcyclosiloxanes "were known" and therefore, the issue "is whether it would have been obvious at the time [the invention was made] to utilize [polymethylcyclosiloxanes] to make non-porous silicon dioxide glass by forming SiO<sub>2</sub> particles" for making "a non-porous glass body" by the admittedly old processes as claimed. Appellants point out that Schwarz used the silicic acid dispersion product as a thickener. Appellants further submit that "researchers in the art would not have expected the polycyclosiloxanes . . . [disclosed by] Schwarz to be useful in producing a non-porous body of high purity fused silica glass," alleging that "[i]n particular, Schwarz's polycyclosiloxanes have a large number of carbon atoms

and not all of these carbon atoms would have been expected to combust when passed through a burner,” and argue that “the production of carbon when burning polycyclosiloxanes to form pyrogenic or fume silicic acid is well documented in the literature,” citing and further arguing in this respect the testimony in the Dobbins declaration, including Kratel and Lipowitz as discussed therein (brief, pages 11-14).

The examiner responds with unsupported arguments that seem to be presumed observations made of a flame hydrolysis process by one of ordinary skill in the art, stating only that “Hyde shows that for almost 70 years it has been known that hydrolysable compound [sic] of silicon can be used to silica on a support” (answer, pages 6-7). The examiner further argues that Kawaguchi “need not explicitly mention the compound to teach the compound,” pointing out that appellants do not argue that “one viewing [Kawaguchi] would at once envision the claimed polymethylcyclosiloxane” (*id.*, page 7). The examiner contends that the testimony in the Dobbins declaration “does not seem reasonable” without scientific argument or supporting evidence for the alleged conclusions that would have been drawn by one of ordinary skill in the art from Kratel and Lipowitz. (answer, pages 7-9).

Appellants reply that Kawaguchi is not an anticipatory reference as it does not discloses specifically disclose polymethylcyclosiloxanes even though encompassed by a generic claim, and point out that only methyl silanes and linear polymethylsiloxanes are disclosed (reply brief, pages 2-5). With respect to Schwarz, appellants contend that the examiner has not addressed why there would have been motivation to use polymethylcyclosiloxanes to produce consolidated glass monoliths in view of the evidence in the Dobbins declaration (reply brief, pages 6-7). Appellants also contend that the limited disclosure of other silicon compounds in Miller and Hyde would have suggested the use of only particular silicon compounds, including silanes and silicates but not polymethylcyclosiloxanes, which latter compounds are not mentioned (reply brief, pages 7-8). Appellants submits that the examiner disregarded the evidence in the Dobbins declaration and presents arguments contending that the examiner’s alleged conclusions with respect to the testimony in the Dobbins declaration and the disclosures in Kratel and Lipowitz are unsupported (reply brief, pages 12-13).

It is well settled that in order to establish a *prima facie* case of obviousness under § 103(a), the examiner must show that some objective teaching, suggestion or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in this art would have led that person to the claimed invention as a whole, including each and every limitation of the claims arranged as required by the claims, without recourse to the teachings in appellants' disclosure. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Fritch*, 972 F.2d 1260, 1265-66, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992); *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) ("The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed process] should be carried out and would have a reasonable likelihood of success viewed in light of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure."). When appellants present factual argument in response to the initial *prima facie* case established by the examiner, the burden shifts back to the examiner to again establish the factual underpinning of a *prima facie* case of obviousness under § 103(a) of the claimed invention as a whole based on the record as a whole in order to maintain the ground of rejection and shift the burden of proof back to appellants. *See, e.g., Oetiker, supra; In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

The examiner has not supplied the record with effective scientific argument or objective evidence which rebuts appellants' arguments with respect to the testimonial evidence in the Dobbins declaration (¶¶ 5 through 7) and the documentary evidence cited in Kratel and Lipowitz which bears on the knowledge of one of ordinary skill in the art at the time the invention was made with respect to the expectations of the performance of polymethylcyclosiloxanes in the processes of Miller. *See In re Reuter*, 651 F.2d 751, 759, 210 USPQ 249, 256 (CCPA 1981) (a factual statement by an expert in the art is entitled to full consideration in the absence of evidence to the contrary). We also do not find in Miller, Schwarz, Hyde and Kawaguchi

substantial evidence which would otherwise support the examiner's position.<sup>7</sup> Indeed, while Schwarz discloses that suitable siloxanes include linear and cyclic polymethylsiloxanes, the illustrating examples are silicon tetrachloride and linear hexamethyldisiloxane (page 3, first and second full paragraphs and Examples 1-3 on pages 3-5). Thus, the disclosure in Schwarz that polymethylcyclosiloxanes can be used to provide a silicic acid which functions as a thickener would not on this record have alone provided evidence suggesting to a person of ordinary skill that, *prima facie*, the such compounds can be used in place of silicon tetrachloride in the processes of Miller, and particularly since there is no evidence in this disclosure which bears on the testimonial and documentary evidence with respect to the ordinary skill in the art brought forth by appellants.

Furthermore, neither the very general suggestion of a type of silica compound cited at page 2 of Hyde nor the generic formula which encompasses linear, branched and cyclic polymethylsiloxanes in Kawaguchi would have provided such a suggestion in support of a *prima facie* case of obviousness in light of appellants' testimonial and documentary evidence. Indeed, while the examiner is correct that one of ordinary skill in the art could have manipulated the formula members and subscripts of the third generic formula of Kawaguchi (pages 3 and 5-6) to arrive at polymethylcyclosiloxanes, we find no evidence that one of ordinary skill in this art would have immediately envisaged polymethylcyclosiloxanes because there is *no direction* to such a subclass by a *pattern of preferences* within the generic formula or elsewhere in Kawaguchi which results in a description of the claimed polymethylcyclosiloxanes as if the same was described by name, and indeed no specific cyclic polymethylsiloxanes are disclosed *per se* in any respect therein. See *In re Sivaramakrishnan*, 673 F.2d 1383, 213 USPQ 441 (CCPA 1982); *In re Schaumann*, 572 F.2d 312, 316-17, 197 USPQ 5, 9-10 (CCPA 1978); *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962). Indeed, appellants' testimonial and documentary evidence bearing on the level of ordinary skill in the art at the time the invention

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<sup>7</sup> It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, see *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

was made must be taken into account in considering the teachings of Kawaguchi in these respects (*see above* note 7).

Since we determine that there is no *prima facie* case of obviousness under § 103(a), we do not reach the evidence of unexpected results in the Declaration of Dr. Powers under 37 CFR § 1.132 submitted July 3, 2000, as relied on in the brief and reply brief.

Accordingly, in the absence of a *prima facie* case of obviousness under § 103(a), we reverse the ground of rejection on appeal.

The examiner's decision is reversed.

### *Reversed*

Bradley Lewis

BRADLEY R. GARRIS  
Administrative Patent Judge

  
CHARLES E. WARREN

CHARLES F. WARREN  
Administrative Patent Judge

*Beverly A Pawlikowski*  
BEVERLY A. PAWLICKOWSKI  
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